

Archives of Biochemistry and Biophysics

Editors

I. A. BARKER
E. S. G. BARRÓN
G. O. BURR
M. L. CROSSLEY
JESSE P. GREENSTEIN
C. NEWTON HARVEY
L. G. KIRKWOOD
I. A. LAUFFER
K. LINDERSTRÖM-LANG
C. M. McCAY
A. NEUBERGER
C. F. NORD
E. C. POLLARD
T. RANDALL
JOHN C. SHEEHAN
I. THEORELL
K. V. THIMANN
C. H. WERKMAN
R. J. WILLIAMS
R. W. G. WYCKOFF



VOLUME 36

1952

ACADEMIC PRESS INC., PUBLISHERS

Archives of Biochemistry and Biophysics



Copyright, 1952, by Academic Press Inc.
Made in United States of America

CONTENTS OF VOLUME 36

NUMBER 1, MARCH, 1952

RICHARD J. BLOCK AND H. B. VAN DYKE. Amino Acids in Posterior Pituitary Protein.....	1
JAKOB A. STEKOL, SIDNEY WEISS AND KATHRYN W. WEISS. Vitamin B ₁₂ and Folic Acid in the Synthesis of Choline in the Rat.....	5
L. WARREN BRANDT, HERMAN D. SMITH, A. C. ANDREWS AND ROBERT E. CLEGG. Electrophoretic Investigation of the Serum Proteins of Certain Birds and Their Hybrids.....	11
G. S. EADIE AND FREDERICK BERNHEIM. Studies on the Sarcosine Oxidase.....	18
F. M. CLARK AND LOUIS R. FINA. The Anaerobic Decomposition of Benzoic Acid During Methane Fermentation.....	26
BERNARD S. STRAUSS. Aspects of the Carbohydrate Metabolism of a Mutant of <i>Neurospora crassa</i> Requiring Acetate for Growth.....	33
HERMAN BRANSON. The Kinetics of Reactions in Biological Systems.....	48
HERMAN BRANSON. Metabolic Pathways from Tracer Experiments.....	60
EVELYN L. OGINSKY. Uptake of Vitamin B ₁₂ by <i>Escherichia coli</i>	71
L. ZECHMEISTER, H. J. DEUEL, JR., H. H. INHOFFEN, J. LEEMANN, S. M. GREENBERG AND J. GANGULY. Stereochemical Configuration and Provitamin A Activity. X. A Comparison of Synthetic 15.15'-Monocis- β -carotene (Central Monocis- β -Carotene) with All- <i>trans</i> - β -carotene in the Rat and Chick...	80
HUGH McLENNAN AND K. A. C. ELLIOTT. Adenosine Triphosphate Concentration and the Synthesis of Acetylcholine by Brain Preparations.....	89
ELIZABETH K. PATTERSON AND MARJORIE E. DACKERMAN. Nucleic Acid Content in Relation to Cell Size in the Mature Larval Salivary Gland of <i>Drosophila melanogaster</i>	97
TA-CHENG TUNG AND PHILIP P. COHEN. Oxidation of Monomethyl-L-Tryptophan.....	114
R. W. SWICK AND C. A. BAUMANN. Effect of Certain Tocopherols and Other Antioxidants on the Utilization of β -Carotene for Vitamin A Storage.....	120
P. K. VIJAYARAGHAVAN, EDWARD A. MURPHY AND MAX S. DUNN. The Effect of Aureomycin on the Growth of Mice..	127

R. M. HOCHSTER AND J. H. QUASTEL. Manganese Dioxide as a Terminal Hydrogen Acceptor in the Study of Respiratory Systems.....	132
VIRGIL L. KOENIG AND J. D. PERRINGS. Critical Ultracentrifugal and Viscosity Studies on Bovine Fibrinogen.....	147
EDWARD J. HEHRE AND ARTHUR S. CARLSON. Evidence on the Constitution of Melezitose through Degradation to Sucrose by Bacterial Action.....	158
VERA R. USDIN AND R. C. BURRELL. Preliminary Study of the Lipides of <i>Rhodotorula gracilis</i>	172
RICHARD O. MOORE AND WALTER L. NELSON. Some Oxidative Enzyme Systems of Mammary Gland Tissue.....	178
ASER ROTHSTEIN AND HARRY BERKE. Endogenous Alcoholic Fermentation in Yeast Induced by 2,4-Dinitrophenol.....	195
HERTA M. BREGOFF AND MARTIN D. KAMEN. Studies on the Metabolism of Photosynthetic Bacteria. XIV. Quantitative Relations between Malate Dissimilation, Photoproduction of Hydrogen, and Nitrogen Metabolism in <i>Rhodospirillum rubrum</i>	202
CHARLES D. KOCHAKIAN, PHYLLIS M. WRIGHT AND EVANGELINE ROBERTSON. Testosterone Propionate and Arginase Activity in Diabetic Rats.....	221
LETTERS TO THE EDITORS:	
H. J. PHAFF AND B. S. LUH. The Preparation of Crystalline Di- and Trigalacturonic Acids.....	231
SAUL ROSEMAN, ROBERT H. ABELES AND ALBERT DORFMAN. Behavior of Carbohydrates Toward Strongly Basic Ion-Exchange Resins.....	232
JOSÉ LUIS REISSIG. Pyridoxal Phosphate as a Cofactor for Serine and Threonine Deaminase of <i>Neurospora</i>	234
E. HOFF-JØRGENSEN. The Effect of "Intrinsic Factor" on the Absorption of Vitamin B ₁₂ by Wild Type <i>Escherichia coli</i>	235
MIKA HAYANO AND RALPH I. DORFMAN. The Action of Adrenal Homogenates on Progesterone, 17-Hydroxyprogesterone and 21-Desoxycortisone.....	237
NORA L. LARSON AND LAWRENCE E. CARPENTER. The Fecal Excretion of Aureomycin by the Pig.....	239
BOOK REVIEWS.....	241

NUMBER 2, APRIL, 1952

GAIL LORENZ MILLER AND RICHARD H. GOLDER. Sedimentation Studies with the Spinco Ultracentrifuge.....	249
B. E. MARCH, E. ENGLISH AND JACOB BIELY. The Effect of Carrier on the Relative Utilization of Different Forms of Vitamin A by the Chick.....	259

CONNELL MARSH AND WALTER MILITZER. Thermal Enzymes. V. Properties of a Malic Dehydrogenase.....	269
C. N. PEISS AND J. FIELD. The Effect of 2,4-Dinitrophenol on the Oxidation of Various Substrates by Rat Brain.....	276
JOSEPH S. GOTS, VIRGINIA E. JORDAN AND ARNOLD F. BRODIE. Studies on the Action of Nitrofurans on Bacterial Enzyme Systems. III. Furacin Interference with Dye Reductions by <i>Escherichia coli</i>	285
P. K. VIJAYARAGHAVAN AND MAX S. DUNN. The Effect of Thymidine, Citroverum Factor, Folic Acid and Degradation Products of Vitamin B ₁₂ on Red Blood Cell Counts in Experimental Anemia in Male Mice.....	299
PAUL W. O'CONNELL, ELIZABETH LIPSCOMB AND B. F. DAUBERT. Studies on the Determination of Polyunsaturated Fatty Acids in Blood.....	304
W. R. ADAMS AND ERNEST POLLARD. Combined Thermal and Primary Ionization Effects on a Bacterial Virus.....	311
ELBERT A. PETERSON, WILLIAM S. FONES and JULIUS WHITE. Evidence for a Three-Carbon Acid Intermediate in the Me- tabolism of Valine.....	323
R. B. SETLOW. The Inactivation of Urease by Deuterons and Heat.....	328
H. A. SCHERAGA AND L. F. NIMS. The Action of X-Rays on Fibrinogen Solutions.....	336
ROBERT A. ALTENBERN AND RILEY D. HOUSEWRIGHT. Carbo- hydrate Oxidation and Citric Acid Synthesis by Smooth <i>Brucella abortus</i> , Strain 19.....	345
JOHN FULLER TAYLOR. The Determination of Sedimentation Constant with the Spinco Ultracentrifuge.....	357
ERIC B. FOWLER AND C. H. WERKMAN. Role of Carbon Dioxide in the Bacterial Synthesis of Aspartate.....	365
HERMAN T. EPSTEIN AND MAX A. LAUFFER. Ultracentrifugal Identification of Infectious Entities with Characteristic Particles.....	371
LEO P. VERNON AND S. ARONOFF. Metabolism of Soybean Leaves. IV. Translocation from Soybean Leaves.....	383
KURT I. ALTMAN, LEON L. MILLER AND JONAS E. RICHMOND. The Role of the Carbon Skeleton of Lysine in the Biosyn- thesis of Hemoglobin.....	399
PAUL OHLMEYER AND ROMAS SHATAS. Heat of Hydrolysis of Some Phosphate Compounds.....	411
C. A. FLANDERS. Hemicelluloses and Summative Analysis of Timothy Hay.....	421
C. A. FLANDERS. Hemicellulose Fractions of Some Hays and Straws.....	425

MAX BIGGS AND DAVID KRITCHEVSKY. Observations on the Suitability of Tritium-Labeled Cholesterol for the Study of Cholesterol Metabolism.....	430
C. L. GEMMILL AND R. L. PLUNKETT. The Kinetics of the Inhibition by Thyroxine of the Cupric Chloride Catalysed Oxidation of Ascorbic Acid.....	434
RICHARD H. GOODWIN AND FREDERICK KAVANAGH. The Fluorescence of Coumarin Derivatives as a Function of pH. II..	442
JAMES G. HAMILTON, JR., AND RALPH T. HOLMAN. Displacement Analysis of Lipides, VIII. Preliminary Studies with Steroids.....	456
CHOH HAO LI AND KAI O. PEDERSEN. Physical Studies of Adrenocorticotrophic Hormone in Acid Solutions.....	462
V. WALLACE AND J. W. PORTER. Phytofluene.....	468
AARON BUNSEN LERNER. Mammalian Tyrosinase: Effect of Ions on Enzyme Action.....	473
LETTERS TO THE EDITORS:	
KLAUS F. ODENHEIMER. Improved Scale for Warburg Manometers.....	482
WALTER H. SEEGER. A New Plasma Antithrombin Reaction.....	484
C. A. MAWSON AND M. I. FISCHER. Carbonic Anhydrase and Zinc in the Prostate Glands of the Rat and Rabbit....	485
WILLIAM S. FONES. The Enzymatic Conversion of L-threo- and L-erythro- β -Phenylserine to D- and L-Mandelic Acid.....	486
F. J. RYAN. Analogs of Leucine and the Utilization of L-Leucine by <i>Neurospora</i>	487
PING-YAO CHENG. Correction in the Derivation of Vogler's Method for Extending the Reading of a Warburg Manometer.....	489
LAWRENCE M. WHITE AND GERALDINE E. SECOR. The Oligosaccharides Formed During the Sucrose-Invertase Reaction.....	490
BOOK REVIEWS.....	492
BOOKS RECEIVED FOR REVIEW.....	498
ERRATUM	498
AUTHOR INDEX.....	499
SUBJECT INDEX.....	503
INDEX FOR BOOK REVIEWS.....	506